

# ECM-23F II

## SERVICE MANUAL

E Model



### SPECIFICATIONS

#### General

Type	Electret condenser microphone (with back-electret condenser capsule)
Microphone output connector	Cannon XLR-3-12C type
Battery	R6 (size AA) battery
Dimensions	27 × 190 mm (outside diameter × length) (1.06 × 7.48 inches)
Weight	215 g (7.6 oz) incl. battery

#### Performance

Frequency response	20—20,000 Hz
Directivity	Uni-directional
Output impedance	200 ohms ±20% balanced (Phone plug: Unbalanced)
Output level	Open circuit voltage*: -68 ±3 dB Effective output level*: -47 ±3 dBm Recommended load impedance is more than 3 k ohms.
Power requirement	Normal operating voltage: 1.5 V Minimum operating voltage: Approx. 1 V
Battery life	Approx. 150 hours with Sony battery SUM-3 (NS)
Noise level	Signal-to-noise ratio More than 50 dB (1,000 Hz, 1 µbar) Inherent noise Less than 24 dB SPL (0 dB SPL = $2 \times 10^{-4}$ µbar) Wind noise* <sup>3</sup> (with wind screen) Less than 45 dB SPL Induction noise from external magnetic field* <sup>4</sup> Less than 5 dB SPL

Maximum sound pressure input level (at 1,000 Hz, 1% distortion)

More than 134 dB SPL

Dynamic range

More than 110 dB

Temperature

20°C to +60°C (-4°F to +140°F) for storage

0°C to 60°C (32°F to 140°F) for operation

\*1 0 dB = 1 V/µbar, 1,000 Hz

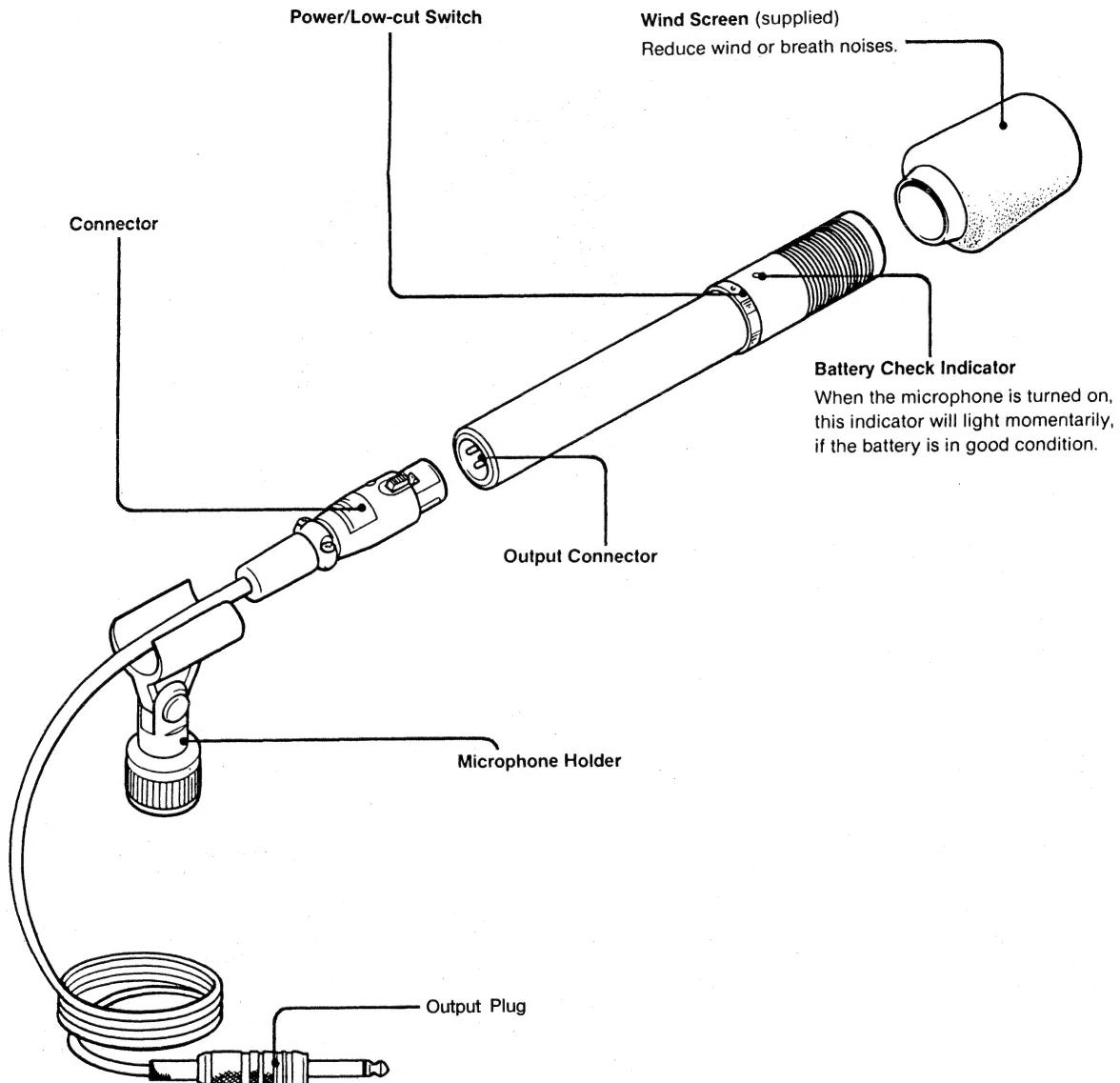
\*2 0 dBm = 1 mW/10 µbar, 1,000 Hz

\*3 Wind noise is the value measured by applying a wind velocity of 2 m/sec (6.6 ft/sec) from all directions to the microphone. The mean value is taken and converted to the equivalent input sound level.

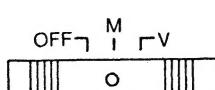
\*4 The external magnetic field induction noise is measured with the microphone placed in an alternating magnetic field of 50 Hz, 1 milligauss. The maximum noise value is taken and then converted to the equivalent input sound level.

**ELECTRET CONDENSER MICROPHONE**  
**SONY®**

## Connection and Parts Identification

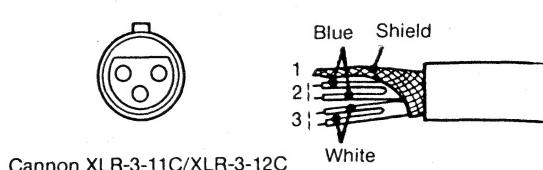


## Turning the microphone on or off



## Connector Replacement

To replace the connector, proceed as follows.

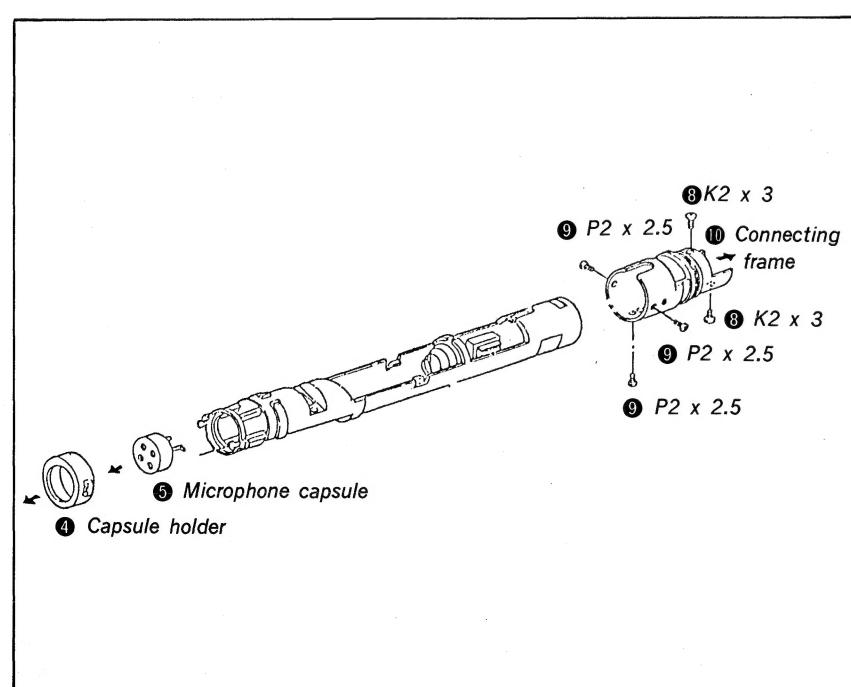
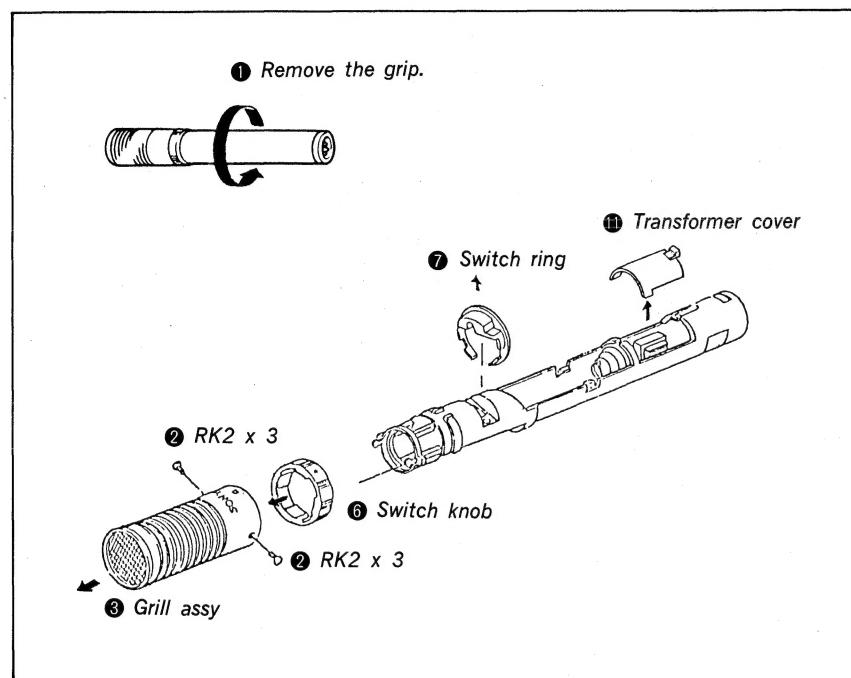


Cannon XLR-3-11C/XLR-3-12C

## MOUNTING DIAGRAM

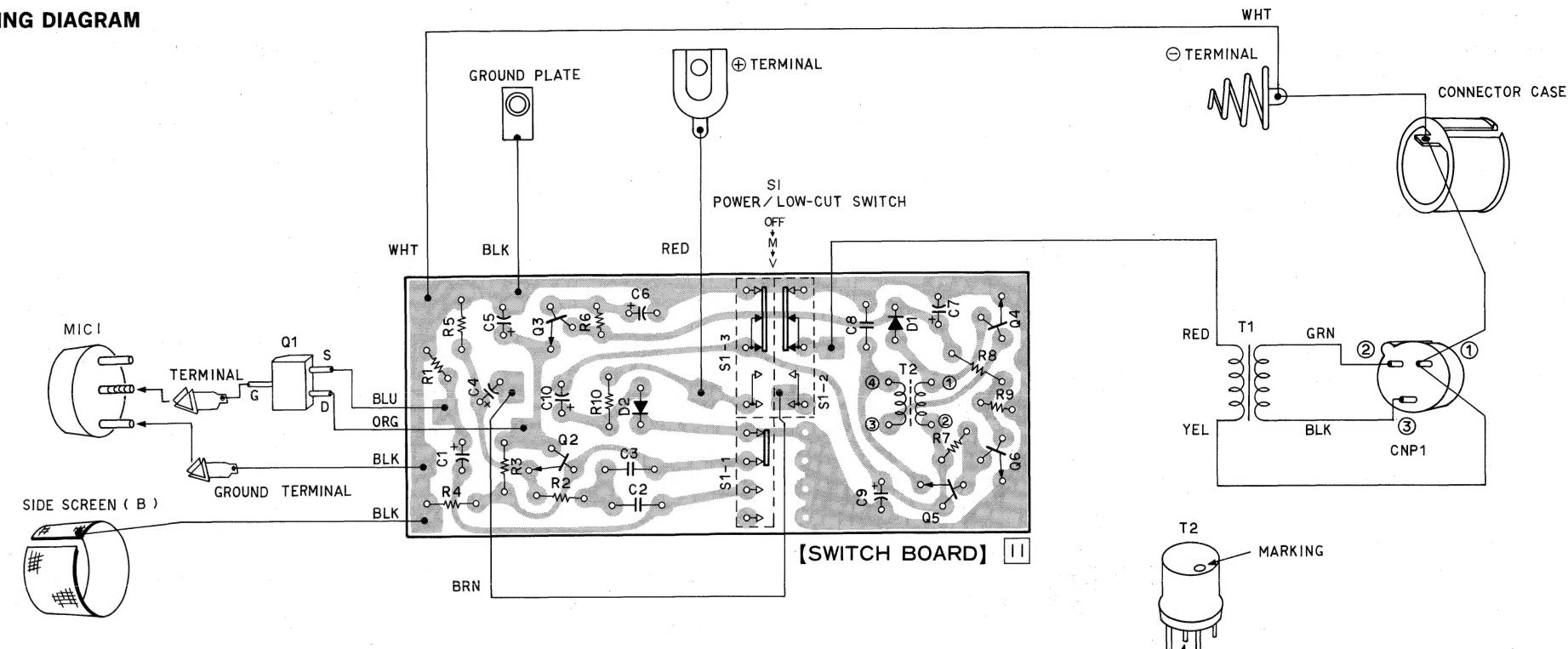
## DISASSEMBLY

- (1) Transformer Cover : ①, ⑪
- (2) Grill Assy : ①—③
- (3) Microphone Capsule : ①—⑤
- (4) Connecting Frame : ①—③, ⑥—⑩

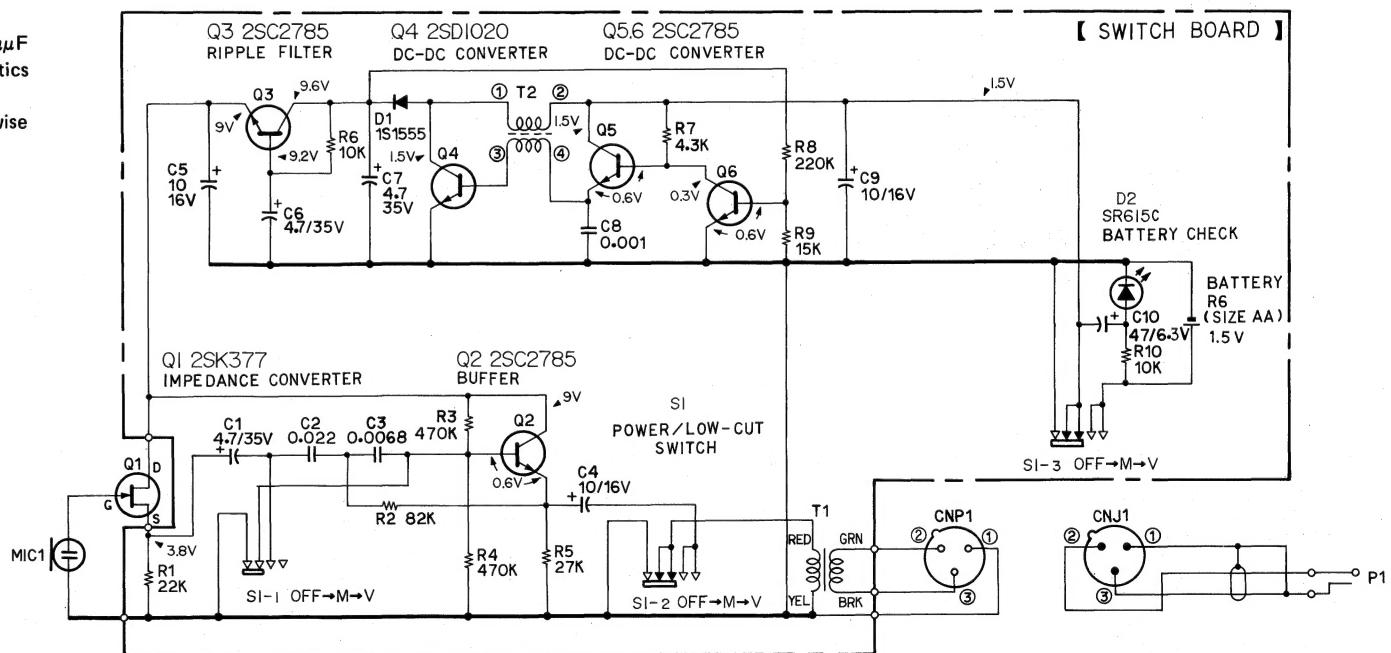


## Note on Schematic

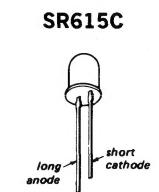
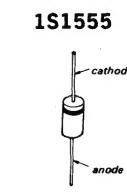
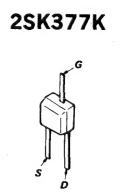
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\mu\text{F}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.



## SCHEMATIC DIAGRAM



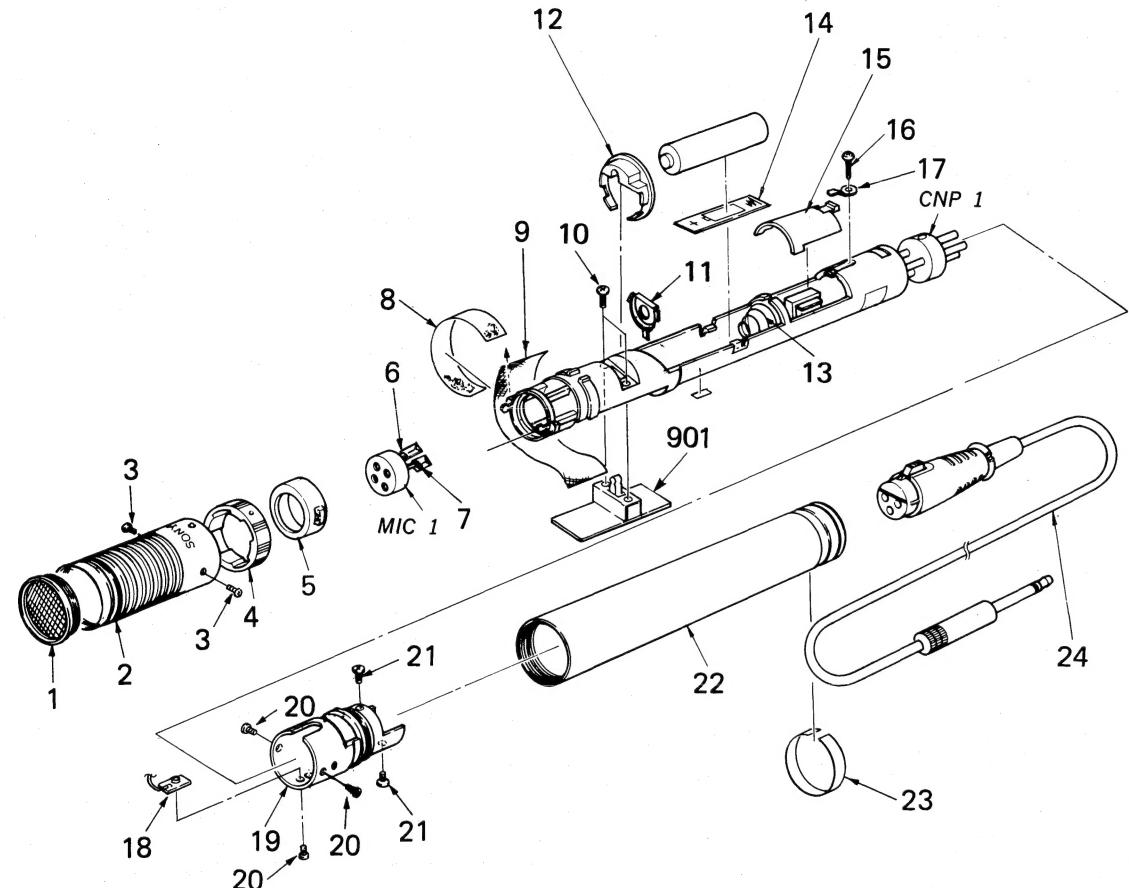
## Semiconductor Lead Layouts



## EXPLODED VIEW AND PARTS LIST

NOTE:  
• The mechanical parts with no reference number in the exploded views are not supplied.

• Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



No.	Part No.	Description	Remarks
1	X-2539-601-1	RING ASSY, TOP	
2	X-2539-602-1	GRILL ASSY	
3	7-627-652-18	SCREW, PRECISION +RK 2X3	
4	2-513-915-11	KNOB, SWITCH	
5	2-529-957-01	HOLDER, CAPSULE	
6	*2-532-219-00	TERMINAL, GROUND	
7	2-523-713-00	TERMINAL	
8	*2-539-607-01	SCREEN (C), SIDE	
9	*2-539-606-01	SCREEN (B), SIDE	
10	7-627-552-08	SCREW, PRECISION +P 1.7X2.5	
11	2-520-113-00	TERMINAL PLATE, POSITIVE	
12	2-513-914-00	RING, SWITCH	
13	X-2523-006-0	TERMINAL PLATE ASSY, NEGATIVE	
14	2-539-609-01	LABEL, BATTERY	
15	*2-513-924-00	COVER, TRANSFORMER	

No.	Part No.	Description	Remarks
16	*4-908-792-11	SCREW, TAPPING B 2X3	
17	2-513-932-00	SPRING, GROUND	
18	*2-539-605-01	PLATE, GROUND	
19	*2-539-603-01	CONNECTING FRAME	
20	7-627-553-27	SCREW, PRECISION +P 2X2.5	
21	7-627-452-18	SCREW, PRECISION +K 2X3	
22	2-539-602-01	GRIP	
23	2-539-610-01	LABEL, MODEL NUMBER	
24	1-559-621-11	CORD, MICROPHONE (4 CORE)	
901	*1-624-396-11	PC BOARD, SWITCH	

## ELECTRICAL PARTS LIST

## NOTE:

• Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS:  
MF:μF, PF:μμF.  
RESISTORS

• All resistors are in ohms.

ELECTRICAL PARTS		ACCESSORY & PACKING MATERIAL				
Ref.No.	Part No.	Description			Part No.	Description
C1	1-124-245-00	ELECT	4.7MF	20%	35V	2-539-618-01 CASE, ORNAMENTAL
C2	1-130-487-00	MYLAR	0.022MF	5%	50V	*2-539-617-01 INDIVIDUAL CARTON
C3	1-130-481-00	MYLAR	0.0068MF	5%	50V	2-599-370-11 MANUAL, INSTRUCTION
C4	1-124-462-00	ELECT	10MF	20%	16V	X-2539-604-1 WINDSCREEN ASSY (B)
C5	1-124-462-00	ELECT	10MF	20%	16V	1-559-621-11 CORD, MICROPHONE (4 CORE)
C6	1-124-245-00	ELECT	4.7MF	20%	35V	A-4581-009-A HOLDER ASSY, MICROPHONE
C7	1-124-245-00	ELECT	4.7MF	20%	35V	3-701-620-00 BAG, POLYETHYLENE
C8	1-161-039-00	CERAMIC	0.001MF	10%	25V	
C9	1-124-462-00	ELECT	10MF	20%	16V	
C10	1-124-224-00	ELECT	47MF	20%	6.3V	
CNP1	1-509-096-00	CONNECTOR, CANNON XLR-3-14 PIN INSERT				
D1	8-719-815-55	DIODE 1S1555				
D2	8-719-123-70	DIODE SR615C				
MIC1	8-814-238-00	CAPSULE, MICROPHONE				
Q1	8-729-802-31	TRANSISTOR 2SK377-K				
Q2	8-729-178-54	TRANSISTOR 2SC2785-F				
Q3	8-729-178-54	TRANSISTOR 2SC2785-F				
Q4	8-729-102-02	TRANSISTOR 2SD1020-J				
Q5	8-729-178-54	TRANSISTOR 2SC2785-F				
Q6	8-729-178-54	TRANSISTOR 2SC2785-F				
R1	1-249-433-11	CARBON	22K	5%	1/4W	
R2	1-249-440-11	CARBON	82K	5%	1/4W	
R3	1-247-895-00	CARBON	470K	5%	1/4W	
R4	1-247-895-00	CARBON	470K	5%	1/4W	
R5	1-249-434-11	CARBON	27K	5%	1/4W	
R6	1-249-429-11	CARBON	10K	5%	1/4W	
R7	1-215-436-00	CARBON	4.3K	5%	1/4W	
R8	1-247-887-00	CARBON	220K	5%	1/4W	
R9	1-249-431-11	CARBON	15K	5%	1/4W	
R10	1-249-429-11	CARBON	10K	5%	1/4W	
S1	1-553-414-00	SWITCH, SLIDE				
T1	1-427-589-11	TRANSFORMER, OUTPUT				
T2	1-448-874-11	TRANSFORMER, DC-DC CONVERTER				